



ENERT/S

Prepared for:

**CYPRESS CREEK RENEWABLES
HA LAND LEASE HOLDINGS LLC
BATTLEBORO SOLAR, LLC**

**Final due diligence for
Battleboro Solar Project
(6.840MW_{DC}/4.950 MW_{AC})**

Project located in Battleboro, North Carolina

March 3, 2016

FINAL



6. PROJECT DESIGN AND ENGINEERING REVIEW

Enertis has received a Permit Level drawing package created by Entropy Solar Integrators dated October 14th, 2015 and a Civil Field Observation Report dated November 20th, 2015. The package and observation report includes electrical details and wiring schedules, civil works details, and construction and racking specifications. The drawings generally comply with common engineering practice and no major issues were discovered during the IE's review. Additionally, the observation report shows that only minor civil works tasks remain.

The IE notes that since the PV array source circuit is negatively grounded, potential-induced degradation (PID) is not an identified risk for this Project. However, third-party PID testing has not been performed on BYD modules.

The Plant's low voltage DC system utilizes 22,800 BYD 300P6C-36 300 W poly-crystalline modules. The modules are mounted on a fixed tilt racking system at a 20° tilt. The Plant will be divided into six sub-systems which are summarized in Table 6.1 below.

Battleboro Solar Sub-System Summary			
Inverter	Number of Strings	Number of Modules	DC/AC Power (MW)
1 – 6	200	3,800	1.140 MW _{DC} / 0.825 MW _{AC}
Total	1,200	22,800	6.840 MW_{DC} / 4.950¹⁰ MW_{AC}

Table 6.1. Battleboro Sub-System/Inverter Summary

The combiner box schedule provided shows that the maximum DC voltage drop is 1.29%, which is acceptable. Pairs of inverters feed into 1,650 kVA transformers. The three 1,650 kW inverter pair-transformer sub-systems are connected in parallel and then transitioned into a single combined medium voltage feed. The medium voltage output underground feeder transitions into overhead conductors at the utility pole with fused cut out and surge arrestors. The feeder then continues to the next pole which hosts the customer meter prior to connecting to the GOAB switch at the point of delivery where the Utility performs their scope of work based on the Project interconnection agreement connecting the Project to the Point of Interconnection.

¹⁰ SMA Sunny Central inverters are subject to a 10% boost above nameplate power at temperatures up to 25°C. The Interconnection Agreement Maximum Physical Export Capability is set at 5.000 MW.

FINAL